

**Listing Of Claims:**

1. (Currently Amended) A packet based display interface arranged to connect a video source directly to a video display device, comprising:

a transmitter unit coupled to the video source arranged to receive a video source packet data stream in accordance with a native stream rate;

a receiver unit coupled to the video display device; and

a linking unit coupling the transmitter unit and the receiver unit arranged to transfer a video data packet stream formed of a number of video data packets based upon the video source packet data stream in accordance with a link rate that is independent of the native stream rate between the transmitter unit and the receiver unit comprising: a unidirectional main link line arranged to carry the video data packets from the transmitter unit to the receiver unit and a bi-directional auxiliary channel line physically separate from the main link line and arranged to transfer information between the transmitter unit and the receiver unit and vice versa wherein the linking unit does not include a clock line.

2. (Previously Presented) A packet based display interface as recited in claim 1, wherein the video data packet stream is one of a number of video data packet streams each having an associated adjustable data stream link rate that is independent of the native stream rate.

3. (Canceled).

4. (Currently Amended) A display interface as recited in claim 1, wherein the bi-directional auxiliary channel includes a ~~is formed of a uni-directional~~ back channel configured to carry information from the video display device to the video source ~~and a uni-directional forward channel included as part of the main channel for carrying information from the video source to the video display device in concert with the back channel.~~

5. (Previously Presented) A display interface as recited in claim 2, wherein the main link unit further comprises:

a number of virtual links each being associated with a particular one of the video data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate.

6. (Original) A display interface as recited in claim 5, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths.

7. (Previously Presented) A display interface as recited in 1, wherein the video data stream is packetized over a respective virtual link based upon a mapping definition.

8. (Previously Presented) A display interface as recited in claim 1, further comprising:  
a hot plug event detector unit arranged to automatically determine when an active display device is connected to the linking unit.

9. (Previously Presented) A display interface as recited in claim 2, wherein the information includes display timing information used by the display device to provide a displayed image based upon the received data stream.

10. (Previously presented) A display interface as recited in claim 1, wherein the information includes sync loss information, dropped packets information and results of training sessions information.

11. (Previously Presented) A display interface as recited in claim 2, wherein the video data packet transfer is an isochronous type transfer that includes a video/graphics data stream and a multichannel audio stream and wherein the information transfer is an asynchronous transfer.

12. (Original) A display interface as recited in claim 1, wherein the link rate is adjustable in a range of approximately 1.0 Gigabits per second (Gbps) to approximately 2.5 Gbps.

13. (Original) A display interface as recited in claim 1, wherein the receiver unit includes a time-base recovery unit arranged to regenerate a particular data stream's native rate based upon a time stamp embedded within the main link data packets.

14 - 16 (Canceled).

17. (Previously presented) A display interface as recited in claim 1, wherein a native audio stream rate is calculated based upon the audio sample rate, the number of bits per sample and the corresponding link rate.

18. (Previously Presented) A display interface as recited in claim 2, wherein the number of video data streams are multiplexed to form a single data stream suitable for transmission over the linking unit.

19. (Previously Presented) A display interface as recited in claim 1, wherein some of the video data packets include a number of sub-packets.

20. (Previously Presented) A display interface as recited in claim 19 further comprising:  
a selective refresh unit included in the video display device that updates only a portion of a displayed graphics image for every video frame based upon a number of image coordinates corresponding to the updated portion of the displayed image by way of sub-packets included in a corresponding video data stream.

21. (Currently Amended) A packet based method of ~~coupling~~ sending video data from a video source device to a video display device, comprising:  
~~providing a video source device having a transmitter unit coupled thereto;~~  
~~providing video display device having a receiver unit coupled thereto;~~  
receiving a video data stream in accordance with a native stream rate ~~[[by]]~~ at the transmitter unit;  
packetizing the video data stream;  
~~connecting the transmitter unit and the receiver unit by way of a linking unit wherein the linking unit does not include a clock line;~~  
~~forming a video data packet stream formed of a number of video data packets based upon the video data stream; and~~  
sending the video data packets from the video source device to the video display device at a link rate independent of the native stream rate using a linking unit comprising a unidirectional main link for transmitting the video data packets from the video source device to the video sink device and a physically separate bi-directional auxiliary channel for transferring information between the video source device and the video sink device, wherein neither the unidirectional main link nor the bi-directional auxiliary channel includes a clock line.

22. (Previously Presented) A method as recited in claim 21, wherein the video data packet stream is one of a number of video data packet streams each having an associated adjustable data stream link rate that is independent of the native stream rate.

23. (Previously Presented) A method as recited in claim 21, further comprising:  
providing a unidirectional main link arranged to carry the video data packets from the transmitter unit to the receiver unit; and  
providing a bi-directional auxiliary channel arranged to transfer information between the transmitter unit and the receiver unit and vice versa.

24. (Currently Amended) A method as recited in claim 23, wherein the bi-directional auxiliary channel includes ~~is formed of~~ a uni-directional back channel configured to carry information from the video display device to the video source device ~~and a uni-directional forward channel included as part of the main channel for carrying information from the video source device to the video display device in concert with the back channel.~~

25. (Previously Presented) A method as recited in claim 22, wherein the main link unit further comprises:  
a number of virtual links each being associated with a particular one of the video data packet streams wherein each of said virtual links has an associated virtual link bandwidth and a virtual link rate.

26. (Original) A method as recited in claim 25, wherein a main link bandwidth is at least equal to an aggregate of the virtual link bandwidths.

27. (Previously Presented) A method as recited in 21, wherein the video source data stream is packetized over a respective virtual link based upon a mapping definition.

28. (Previously Presented) A method as recited in claim 21, further comprising:  
automatically determining when an active video display device is connected to the linking unit by a hot plug detector unit.

29. (Previously Presented) A method as recited in claim 22, wherein the information includes display timing information used by the video display device to provide a displayed image based upon the received data stream.

30. (Original) A method as recited in claim 21, wherein the information includes sync loss information, dropped packets information and the results of training sessions information.

31. (Previously Presented) A method as recited in claim 22, wherein the video data packet transfer is an isochronous type transfer that includes a video/graphics data stream and a multichannel audio stream and wherein the information transfer is an asynchronous transfer.

32. (Original) A method as recited in claim 21, wherein the link rate is adjustable in a range of approximately 1.0 Gigabits per second (Gbps) to approximately 2.5 Gbps.

33. (Original) A method as recited in claim 21, wherein the receiver unit includes a time-base recovery unit arranged to regenerate a particular data stream's native rate based upon a time stamp embedded within the main link data packets.

34 – 36 (Canceled).

37. (Previously Presented) A method as recited in claim 21, wherein a native audio stream rate is calculated based upon the audio sample rate, the number of bits per sample and the corresponding link rate.

38. (Previously Presented) A method as recited in claim 22, wherein the number of video data streams are multiplexed to form a single data stream suitable for transmission over the linking unit.

39. (Previously Presented) A method as recited in claim 21, wherein some of the video data packets include a number of sub-packets.

40. (Previously Presented) A method as recited in claim 39 further comprising:  
a selective refresh unit included in the video display device that updates only a portion of a displayed graphics image for every video frame based upon a number of image coordinates corresponding to the updated portion of the displayed image by way of sub-packets included in a corresponding video data stream.

41. (Withdrawn) A packet based video interface for connecting a video source device to a display device, comprising:

a source video application layer arranged to provide a source video data stream, a data stream format, a number of data stream attributes, and a stream identification number;

a source video link layer coupled to the source video application layer arranged to provide link initialization and video interface management functions;

a source video physical layer coupled to the source video link layer that includes,

a source video logical layer arranged to at least packetize/depacketize video data, scramble/unscramble video data, generate link training patterns, encode and decode video data, and

a source video electrical layer that includes circuitry for initialization, parallel to serial and serial to parallel conversions, and spread spectrum capable PLLs;

a bidirectional auxiliary channel coupling the source video physical layer and a video display device physical layer arranged to transmit information between the source video physical layer and the video display device physical layer and vice versa; and

a unidirectional main link coupling the coupling the source video physical layer and the video display device physical layer arranged to transmit information from the source video physical layer and the video display device physical layer at a link rate that is independent of a native stream rate, wherein neither the bidirectional auxiliary channel nor the unidirectional main line include a clock line.

42. (Withdrawn) A packet based video interface as recited in claim 41, further comprising:

a video display device application layer arranged to provide a set of display attributes to the source video application layer; and

a video display device link layer coupling the video display device application layer to the video display device physical layer.

43. (Withdrawn) A packet based video interface as recited in claim 42, wherein the video display device application layer and the source video application layer are each an application programming interface that describes a format for the source video data stream and the video display device.

44 - 47 (Canceled).

48. (New) A computer chip configured to:

- provide a video source device having a transmitter unit coupled thereto;
- provide video display device having a receiver unit coupled thereto;
- receive a video data stream in accordance with a native stream rate by the transmitter unit;
- connect the transmitter unit and the receiver unit by way of a linking unit wherein the linking unit does not include a clock line but contains a unidirectional main link line for transmitting video and a bidirectional auxiliary channel line physically separate from the main link;
- form a video data packet stream formed of a number of video data packets based upon the video data stream; and
- transfer the video data packet stream in accordance with a link rate between the transmitter unit and the receiver unit, wherein the link rate is independent of the native stream rate.